

CLAIMS:

We Claim:

- 1 1. An apparatus comprising:
2 a plurality of pixels arranged as a plurality of columns;
3 a light source located at a bottom or top of each column wherein a light
4 source shines a predetermined combination of red, green, and blue light onto the
5 FLCD lens above or below it;
6 wherein each of said columns includes:
7 a plurality of ferro-electric liquid crystal display (FLCD) lenses arranged in a
8 hierarchy such that each FLCD lens shifts received light onto a combiner prism or
9 onto the FLCD lens above or below it, until the light reaches a top or bottom pixel in
10 the column; and
11 a synchronizer coupled to the pixels of each of the plurality of columns and
12 configured to activate the plurality of pixels by row location.
- 1 2. The apparatus of claim 1, wherein the plurality of pixels are activated from
2 top to bottom.
- 1 3. The apparatus of claim 1, wherein the plurality of pixels are activated from
2 bottom to top.
- 1 4. The apparatus of claim 1, wherein a set of synchronizers is configured to
2 activate consecutive rows of the plurality of pixels.
- 1 5. The apparatus of claim 1, wherein the lens of the top row tilts over red, green,
2 and blue lights onto the combiner prism.
- 1 6. The apparatus of claim 1, wherein the synchronizer determines how fast to
2 activate the next row and tilt it onto the next set of combiner prisms.
- 1 7. The apparatus of claim 1, wherein the synchronizer comprises a digital timer
2 connected to a voltage controller.

- 1 8. The apparatus of claim 1, wherein the red, green, and blue light sources are
2 placed front to back or side by side, at the top or bottom of each column, depending
3 on an amount of refractive index available.
- 1 9. The apparatus of claim 6, wherein a gap is formed between two FLCD lenses
2 to account for the refractive index.
- 1 10. The apparatus of claim 1, wherein an angle of a tilt is controlled by changing
2 current intensity applied to each FLCD by the synchronizer.
- 1 11. The apparatus of claim 1, wherein an angle of a tilt is controlled by a
2 refractive index of the FLCD lens and combiner prism.
- 1 12. The apparatus of claim 1 wherein each of the plurality of columns comprises:
2 a frosted glass-like treatment to eliminate or decrease the number of speckles
3 obtained from the light source.
- 1 13. The apparatus defined by claim 1 wherein each of the plurality of columns
2 comprises a rear matte black coating to enhance display contrast.
- 1 14 The apparatus of claim 9, wherein the gap comprises one of air or plastic.
- 1 15. A method comprising:
2 arranging a plurality of ferro-electric liquid crystal display (FLCD) lenses as a
3 plurality of columns such that each FLCD lens in a column shifts received light onto
4 a combiner prism or onto the FLCD lens above or below it, until the light reaches a
5 top or bottom pixel in the column; and
6 shining a predetermined combination of red, green, and blue light onto a
7 FLCD lens at a top or bottom of each column;
8 synchronizing each of the plurality of columns and configured to activate the
9 plurality of pixels by row location.
- 1 16. The method of claim 15, comprising:

2 activating each row of pixels wherein during said synchronizing, a voltage
3 controller connected to an FLCD lens causes the FLCD lens to tilt the light coming
4 from below or above it onto a combiner prism.

1 17. The method of claim 15 comprising:
2 activating the plurality of pixels from one of top to bottom and bottom to top.

1 18. The method of claim 15, comprising:
2 tilting over red, green, and blue lights onto a combiner prism.

1 19. The method of claim 15, comprising:
2 arranging the red light, the green light, and the blue light from front to back
3 or side by side, at the bottom or top of each column, depending on an amount of
4 refractive index available.

1 20. The method of claim 15, comprising:
2 eliminating or decreasing a number of speckles obtained from a light source
3 by use of a frosted front facing and using a black matte back wall to show a black
4 pixel when no light is emitted.

1 21. The method of claim 18, wherein said tilting is at a predetermined angle due
2 to a changing voltage value to an FLCD lens.

1 22. The method of claim 19, comprising:
2 providing a gap between two FLCD lenses to account for the refractive index.

1 23. The method of claim 22, wherein the gap is formed from one of air and
2 plastic.

1 24. A system comprising a flat moldable HDTV display, wherein the display
2 comprises:
3 a plurality of pixels arranged as a plurality of columns;
4 a light source located at a bottom or top of each column wherein a light
5 source shines a predetermined combination of red, green, and blue light onto the
6 FLCD lens above or below it;

7 wherein each of said columns includes:
8 a plurality of ferro-electric liquid crystal display (FLCD) lenses arranged in a
9 hierarchy such that each FLCD lens shifts received light onto a combiner prism or
10 onto the FLCD lens above or below it, until the light reaches a top or bottom pixel in
11 the column; and
12 a synchronizer coupled to the pixels of each of the plurality of columns and
13 configured to activate the plurality of pixels by row location.

1 25. The system of claim 24, wherein the plurality of pixels are activated from one
2 of top to bottom and bottom to top.

1 26. The system of claim 24, wherein the synchronizer is configured to activate the
2 plurality of pixels on a row by row basis.